We Claim:

1. An antibody or an antibody fragment capable of specifically binding to any one of the group selected from

a site on a VE-cadherin, said site being within the about 15 N-terminal amino acids of domain 1 of a VE-cadherin,

a site on a VE-cadherin, said site being within the about 15 N-terminal amino acids of domain 1 of a VE-cadherin and said N-terminal amino acids having an insertion, deletion or substitution of from 1 to about 5 amino acids relative to a native VE-cadherin amino acid sequence,

a peptide having an amino acid sequence of SEQ ID NO: 1 (DEIWNQMHIDEEKNE),

a peptide having an amino acid sequence of SEQ ID NO: 2 (DWIWNQMHIDEEKNE), and

a peptide having an amino acid sequence of SEQ ID NO: 3 (DWIWNQMHIDEEKNT);

wherein said antibody or said antibody fragment is capable of inhibiting VE-cadherin mediated adherens junction formation *in vitro* but does not exert any significant or substantial effect on paracellular permeability *in vitro*.

2. The antibody or antibody fragment of Claim 1, wherein said antibody or said antibody fragment does not exert any significant or substantial effect on vascular permeability *in vivo*.

3. The antibody or antibody fragment of Claim 1, wherein said antibody or said antibody fragment is substantially non-toxic when administered to an animal or mammal.

4. The antibody or antibody fragment of Claim 1, wherein said antibody or said antibody fragment inhibits angiogenesis *in vivo* or *in vitro* or inhibits tumor metastasis.

5. The antibody or antibody fragment of claim 1, wherein said antibody or antibody fragment inhibits formation of new adherens junctions without disturbing existing adherens junctions.

6. The antibody or antibody fragment of Claim 1, wherein said antibody is a monoclonal antibody or said antibody fragment is from a monoclonal antibody.

7. The antibody or antibody fragment of Claim 1, wherein said monoclonal antibody is murine monoclonal antibody E4B9.

8. A hybridoma which produces the monoclonal antibody of Claim 6.

9. A hybridoma which produces the monoclonal antibody of Claim 7.

10. The antibody or antibody fragment of Claim 1, wherein said antibody or antibody fragment is a single chain antibody, is humanized, is chimerized or is bispecific.

11. The antibody or antibody fragment of Claim 1, wherein said antibody or antibody fragment is fused to a heterologous polypeptide.

12. A pharmaceutical composition comprising the antibody or antibody fragment of any one of Claims 1-11 and a pharmaceutically acceptable carrier or diluent.

13. A method of inhibiting angiogenesis in a mammal which comprises administering the pharmaceutical composition of Claim 12 to said mammal for a time and in an amount effective to inhibit angiogenesis.

14. The method of Claim 13, wherein angiogenesis is associated with any one of a neoplastic disease, a solid tumor, an autoimmune disease, collagenous vascular disease, rheumatoid arthritis, an ophthalmalogical condition, diabetic retinopathy, retrolental fibroplasia or neovascular glaucoma.

15. A method of inhibiting tumor metastasis in a mammal which comprises administering the pharmaceutical composition of Claim 12 to said mammal for a time and in an amount effective to inhibit metastasis of a tumor.

16. The method of Claim 15, wherein said tumor is selected from the group consisting of carcinomas, gliomas, sarcomas, adenocarcinomas, adenosarcomas, adenomas, leukemic tumors and lymphoid tumors.

17. A method of treating a cell proliferative disorder associated with vascularization in a mammal which comprises administering the pharmaceutical composition of Claim 12 to said mammal in an amount effective to inhibit proliferation of endothelial cells without disturbing the normal vasculature.

18. The method of Claim 17, wherein said cell proliferative disorder is a blood vessel proliferative disorders, fibrotic disorders, angiogenesis, tumor growth, tumor metastasis, rheumatoid arthritis, and age-related muscular degeneration.

19. A method for reducing or inhibiting tumor vasculature in a mammal which comprises administering the pharmaceutical composition of Claim 12 to said mammal in an amount effective to inhibit blood vessel formation without adversely affecting existing vasculature.

20. An isolated nucleic acid comprising a nucleotide sequence which encodes a coding sequence for the antibody or antibody fragment, for a variable region of said antibody or for a hypervariable region of said antibody, wherein said antibody or antibody fragment is the antibody from any one of Claims 1-11.

21. An expression vector comprising the nucleic acid of Claim 20 operably linked to sequences to control expression of said nucleotide sequence.

22. A method of gene therapy which comprises administering a nucleic acid of Claim 20 to a mammal in an amount and for a time effective to inhibit angiogenesis at a predetermined site or to inhibit tumor neovascularization.